Introduction

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Occupation and exploitation of a Neolithic levee site (c. 4300-4000 cal. BC)

Edited by D.C.M. Raemaekers & J.P. de Roever

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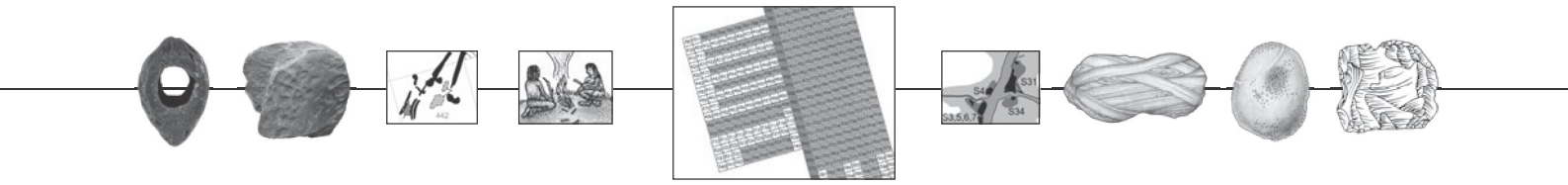

Introduction

D.C.M. Raemaekers[1]

1.1 History of research

The archaeological sites near Swifterbant are located in Oostelijk Flevoland, the Netherlands. Oostelijk Flevoland is a polder, a reclaimed sea floor of the former Zuiderzee (which later, after damming, became a lake, the IJsselmeer), at a depth of c. 4.5 m below mean sea level (NAP; Amsterdam Ordnance Datum). The polder was to become an extensive agricultural area, and to this end, workers of the state service responsible for the polders of the IJsselmeer (at that time the *Rijksdienst voor de IJsselmeerpolders, RIJP*; the IJsselmeerpolders Development Authority), made drawings of the slopes of all freshly cut ditches and carried out numerous corings. In the process, they found evidence not only of the deposits of a prehistoric creek system, but, in 1961, also of archaeological remains on creek banks and dunes (fig. 1.1). These finds marked the start of the archaeological research at Swifterbant. From 1962 onwards, several excavation campaigns by G.D. van der Heide and his RIJP team revealed that the Swifterbant area is a treasure trove of well-preserved Mesolithic and Early Neolithic settlements.

The Biologisch-Archaeologisch Instituut (Biological-Archaeological Institute) of the University of Groningen (now the Groningen Institute of Archaeology) carried out extensive research in the period 1972-1979. The project focused on site S2, located on a bank of a major creek, and on site S3, located on one of the minor creeks. Several dune excavations were carried out at sites S11-S13, S21-S24 and S61 by J.D. Van der Waals, in cooperation with T.D. Price (University of Wisconsin) and R. Whallon (University of Michigan). J.D. van der Waals's team comprised specialists on ceramics, animal bone, human bone, botanical macroremains, geology, flint and wood. The research group produced a large number of publications on various parts of this highly ambitious research project. All relevant publications are listed below.

The research history of Swifterbant site S4 started in 1972, when L. Hacquebord discovered that there are several more sites in the vicinity of site S3, including S4 (Hacquebord, 1976: fig. 3). In 1974, Hacquebord carried out a trial excavation to obtain a sample of archaeological remains for comparison with known sites and to gain more insight into the stratigraphy and age of the deposits. The test trench, which measured 2x8 m, yielded bone, ceramics and flint (Van der Waals, 1976: 23-24). The aspects published so far are the stratigraphy (Van der Waals, 1976: 23-24), the pottery (De Roever, 1979; 2004) and the flint and stone artefacts (Devriendt, 2014).

Exactly 25 years after Van der Waals's last campaign, which was in 1979, the Swifterbant research was resumed by the Groningen Institute of Archaeology as the New Swifterbant Project. In the present project, the University of Groningen is cooperating with museum *Nieuwland Erfgoed* (now Batavialand), Lelystad; local volunteers from *Archeologische Werkgemeenschap Nederland* (Archaeological Working Group the Netherlands), section Flevoland; and the province of Flevoland. All participants are listed in table 1.1. The fieldwork provided opportunities for the *Rijksdienst voor het Cultureel Erfgoe*d (Dutch Cultural Heritage Agency) to study the preservation of the sites S2 (Huisman *et al.,* 2008) and S4 by means of micromorphological analysis (Huisman *et al.,* 2008; 2009; Huisman & Raemaekers, 2014).

In the past decade, Dutch archaeology has seen major changes. As result of new legislation, archaeological research is now a standard part of development plans, and as a consequence, many new sites have been discovered and excavated. Blessed with larger budgets than earlier projects, these projects have made considerable contributions to our knowledge of Dutch prehistory. What can small-scale university field work add? Although lacking some of the possibilities available to large-scale commercial projects, university projects can be fully research

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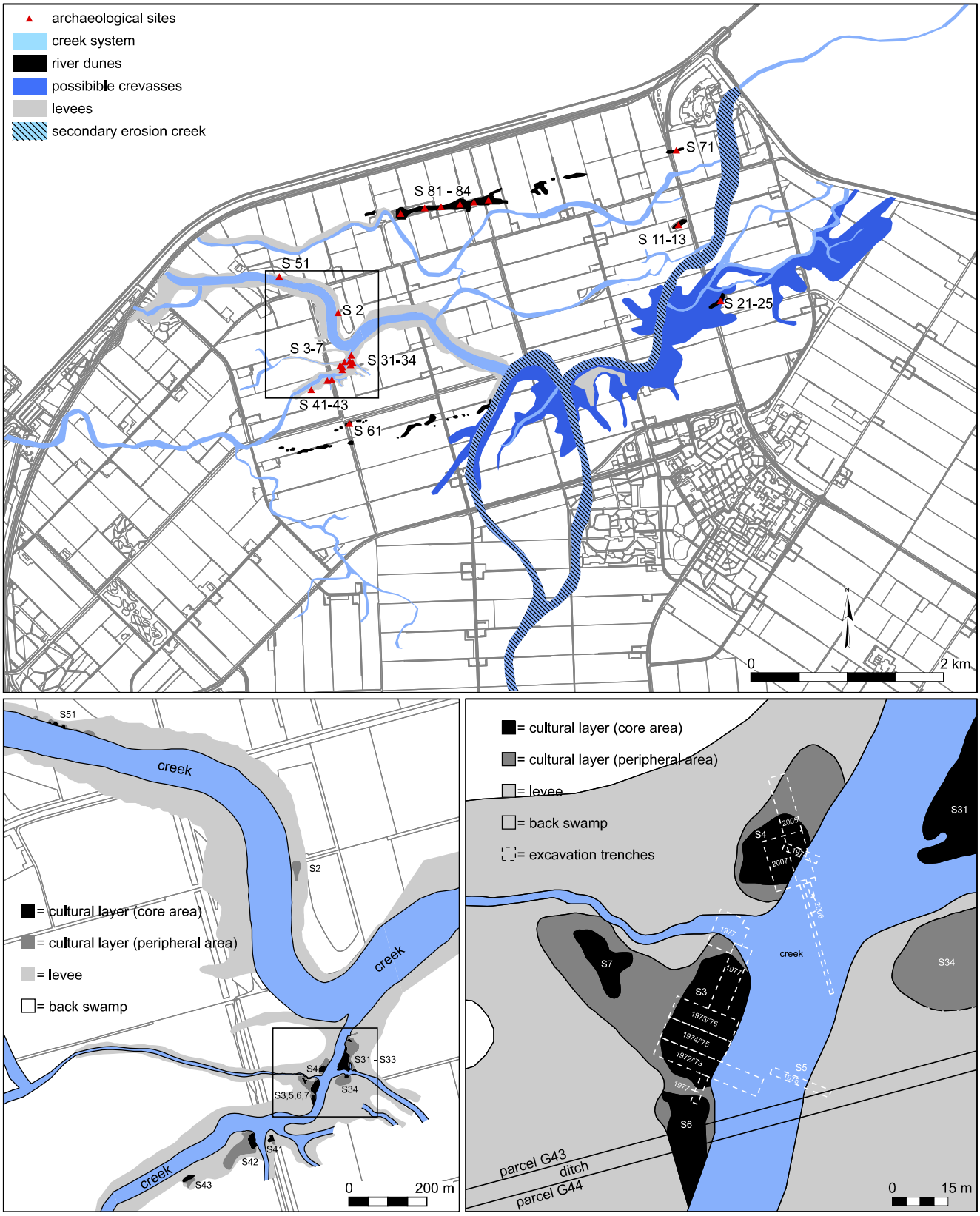

Fig. 1.1 The Swifterbant region (after Devriendt, 2013: figs. 2.2, 2.3 and 2.7).

driven, with research questions leading to research locations, instead of the other way around. In other words, they can focus on important research questions that can be solved with small-scale fieldwork at selected sites. The Swifterbant area is special in this respect: thanks to the previous research efforts in the area (in terms of both fieldwork and publications) its research potential is well understood. The New Swifterbant Project focuses on a number of research questions, the answers to which until now have been left undecided. The research issues involved are as follows (Raemaekers *et al.*, 2005):

1. Local cereal cultivation. For the Swifterbant culture, all evidence of cereal use has been found

Table 1.1 List of participants.

Name	Affiliation	Job capacity
Prof. D.C.M. Raemaekers	University of Groningen	Director 2005-2007
D.E.P. Velthuizen	Nieuwland Erfgoed, Lelystad	Senior field technician 2005-2007
I. Devriendt lic.	University of Groningen	Administration 2005-2007
Drs. I. Woltinge	University of Groningen	Geological research 2007
Drs. W.J. Hogestijn	Municipality of Almere	Archaeology 2007
Drs. A. Nieuwhof	University of Groningen	Archaeology 2007
S. Tiebackx	University of Groningen	Field technician 2007
S.M. Beckerman	University of Groningen	Field assistant 2005
C. Boom	University of Groningen	Field assistant 2006
H. Kranenburg	University of Groningen	Field assistant 2007
A. Pleszynski	University of Groningen	Field assistant 2007
M. van der Wal	University of Groningen	Field assistant 2005
T. Abelen	University of Groningen	Student
K. Blok	University of Groningen	Student
K. Bresser	University of Groningen	Student
M. Brouwer	University of Michigan	Student
S. Cheung	University of Groningen	Student
M. de Boer	AWN Flevoland	Volunteer
P. den Hengst	University of Groningen	Student
T. Dijkstra	University of Groningen	Student
A. Doppert	AWN Flevoland	Volunteer
L. Edens	University of Groningen	Student
J. Eelman	AWN Flevoland	Volunteer
R. Fens	University of Groningen	Student
J. Geuverink	University of Groningen	Student
E. Grefhorst	University of Groningen	Student
S. Griemink	University of Groningen	Student
K. Groothoff	AWN Flevoland	Volunteer
T. Heise	AWN Flevoland	Volunteer
J. Jansen	University of Groningen	Student
A. Kramer	University of Groningen	Student
W. Kreukniet	AWN Flevoland	Volunteer
R. Kruisman	University of Groningen	Student
J. Mendelts	University of Groningen	Student
S. Rathje	University of Kiel	Student
S. Thijsse	AWN Flevoland	Volunteer
H. van Betuw	AWN Flevoland	Volunteer
V. van den Berg	University of Groningen	Student
E. van de Lagemaat	University of Groningen	Student
E. van Galen Last	AWN Flevoland	Volunteer
B. van Rosmalen	AWN Flevoland	Student
R. Verboon	AWN Flevoland	Volunteer
D. Volkerink	University of Groningen	Student
J. Vosselman	University of Groningen	Student
S. Wennink	University of Groningen	Student
J. Wiersma	University of Groningen	Student

on waterlogged sites, in landscapes that seem little suited for cereal cultivation (Cappers & Raemaekers, 2008). The new fieldwork should encompass a sampling strategy equipped for addressing this issue (see chapter 6);

2. Interpretation of intersite variability. The research from the, 1960s and, 1970s made clear that although the creek bank sites are contemporaneous, their archaeological remains differ in such aspects as the presence of human burials and hearths. Archaeobotanical and archaeozoological research was restricted to S3 due to the limited preservation conditions of S2, and so it remained unknown whether site S3 was representative of the Swifterbant creek bank occupation (chapter 7). Zooming out, the dunes sites did provide evidence of occupation in the Mesolithic and Neolithic periods, but the absence of organic remains left uncertainty about how the dune sites functioned in relation to the creek bank sites. The fieldwork should include excavation of a new dune site with well-preserved remains (Raemaekers *et al.,* 2014: S25);
3. Regional occupation history. Although the Swifterbant research was carried out in a clearly defined region, the research was site oriented, and

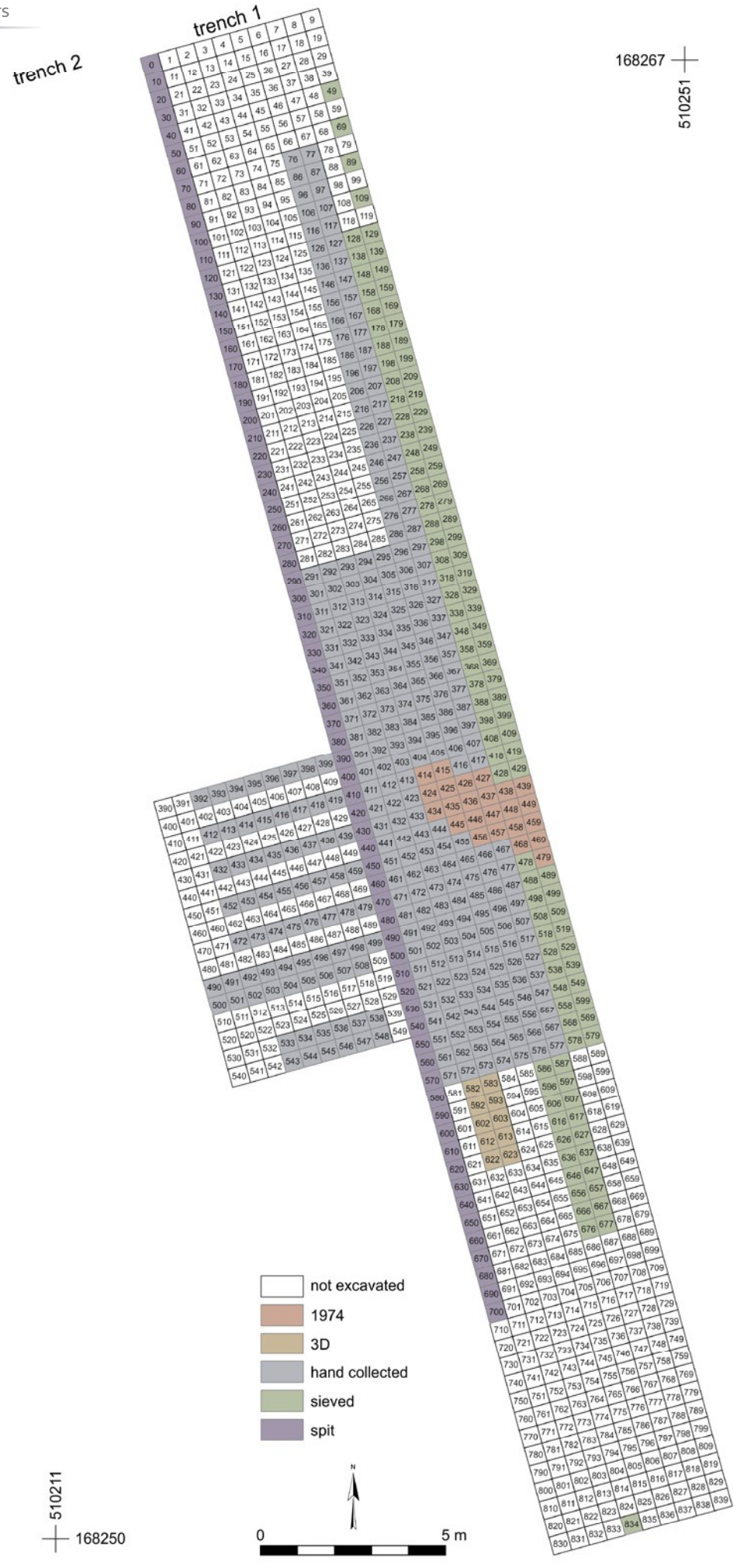

Fig. 1.2 Excavated area of Swifterbant S4 and recovery methods (map E. Bolhuis, UG/GIA).

Table 1.2 Administrative details of the excavation.

Municipality	Dronten
Town	Swifterbant
Location	S4
GIA site code	GIA 92
National research codes (CIS)	12860, 15711, 23748
Coordinates	See figure 1.2
Execution	University of Groningen/Groningen Institute of Archaeology in cooperation with Nieuwland Erfgoed, AWN Flevoland and province of Flevoland
Excavation	Summers of 2005, 2006 and 2007
Duration of the excavation	12 weeks

questions on landscape development, landscape use and infrastructure were left unaddressed. The fieldwork should include excavation of areas outside the settlement sites proper and should include landscape-oriented specialist research;
4. Neolithisation. The available sites do not allow for a study on Neolithisation, as they comprise creek bank sites from the Neolithic and dune sites with occupation histories encompassing the Mesolithic–Neolithic transition but without any organic remains. New fieldwork should provide new sites dating to the centuries before the known creek bank sites, thus allowing for a study on Neolithisation.

The New Swifterbant Project started in 2004, with a small-scale excavation of S2 (Prummel *et al.*, 2009). The major concern was to develop and test fieldwork methods for successful botanical sampling and for wet sieving the clay in which the creek bank sites are embedded. The relatively poor organic preservation of S2 prompted a shift in attention to S4, separated from the well-preserved S3 by a small creek. In 2005, attention focused on the botanical sampling programme and the use of the low-lying area behind the creek bank (fig. 1.2). In 2006, the 2005 trench was expanded into the creek, primarily to establish the relationship between creek bank site and the creek fill, while on the creek bank a small trench was dug for further research on the human burial found in 2005. The 2007 campaign had two goals. First, it aimed to verify the clues, provided by the analysis of thin sections and diatoms, that a cultivated field was located below the settlement. Second, it expanded the excavation area with a series of test trenches to see if more burials were present. The relevant administrative details are given in table 1.2.

From the start, the S4 research was aimed at gaining more information on intersite variability and landscape use (research issues 2 and 3), while the botanical sampling programme was aimed at providing more insight into possible local cereal cultivation (research issue 1). The find of a cultivated field prompted a shift of attention towards both cereal cultivation and the process of Neolithisation. This monograph is the site report proper and focuses on three themes. These are
1. Landscape, exploitation and site function (chapters 2, 6 and 7);
2. Developments in the use history of the site, in terms of material culture and subsistence (chapters 3-7);
3. The use of space (chapter 9).

The second part of this monograph (in prep.) will be dedicated to the full documentation of the cultivated field and will comprise a series of specialist chapters and a synthesis.

1.2 Research methods

In 1974, the excavation plane of S4 was divided into 1x1 m squares, and these were excavated in 10 cm spits. Hand-picked finds were measured in 3D, while the remaining soil was wet sieved with a mesh of 2 mm aperture. Because of the differences in grid orientation, square size and spit depth, the 1974 finds are only incorporated into the analysis here when we describe the find categories in general.

The 2005 trench was positioned to encompass the 1974 trench (fig. 1.3). It allowed a more detailed measuring of the position of the 1974 trench than had previously been available. The 2005 trench was 5 m wide and 29 m long. The plane was subdivided into 50x50 cm squares, numbered 0-9 on the northernmost row to 570-579 on the southernmost row. For spit 2, the square numbers were increased by 1000 (squares 1000-1579), and so on. The westernmost series of squares was shovelled to a depth of, 20 cm to allow superfluous water to flow to the lowest point in the trench. All finds from this trench were collected and attributed to the corresponding square number from spit 1, disregarding the exact depth of the find. On the eastern side of the trench, a 1 m wide strip (square numbers ending with 8 or 9) was selected for wet sieving in the field using a sieve with 2 mm mesh size. This mesh was selected to allow cereal grains to be recovered. Additional soil samples were taken from these squares and kept in reserve for further botanical research (see chapter 6). All remaining squares were excavated using trowels. All finds were bagged together by spit.

The 2006 trench was a southern extension of the 2005 trench into the creek, and it used the same square numbering system. In the 2006 trench, the easternmost squares are designated with 7; these were wet-sieved. The westernmost squares (1-5) were excavated using different documentation systems. At first, the few finds recovered were measured in 3D, but when the find density increased, we shifted to using square numbers and spits. As

Fig. 1.3 The 2005 excavation in progress. Note that the 1974 trench is visible as disturbance (photo D.C.M. Raemaekers, UG/GIA).

Fig. 1.4 Documentation of the cultivated field in 2007 (photo I. Woltinge, UG/GIA).

a result, the finds from this trench are difficult to relate to the other parts of the site.

The 2007 campaign continued excavation in part of the, 2005 trench to spit 9, which was the lowest part of the finds layer. The cultivated field below the finds layer (chapter 9) was documented with field drawings on a scale of 1:1 (see fig. 1.4) and then excavated with shovels. The few finds were simply attributed to the cultivated field. That same year, a second trench was opened to the west of the first trench. Here several test trenches were excavated using trowels.

Specialist research included sampling for soil micromorphology, pollen, diatoms and shells. In the, 2007 campaign, a series of corings at S4 aimed to obtain a more detailed understanding of the site morphology and the extent of the cultivated field (chapter 2).

1.3 List of primary publications

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